WHAT IS CLAIMED IS:

- An isolated nucleic acid selected from the group consisting of SEQ ID NO: 1, SEQ ID NO: 5, SEQ ID NO: 9, SEQ ID NO: 13, SEQ ID NO: 17, SEQ ID NO: 21, SEQ ID NO: 25, SEQ ID NO: 29, SEQ ID NO: 33, SEQ ID NO: 37, SEQ ID NO: 41, SEQ ID NO: 45, SEQ ID NO: 49, SEQ ID NO: 53, SEQ ID NO:57, SEQ ID NO:61, SEQ ID NO:65, SEQ ID NO:69, SEQ ID NO:73, SEQ ID NO:77, SEQ ID NO:81, SEQ ID NO:85, SEQ ID NO:89, SEQ ID NO:93, SEQ ID NO:97, SEQ ID NO:101, SEQ ID NO:105, SEQ ID NO:109, SEQ ID NO:113, SEQ ID NO:117, SEQ ID NO:121, SEQ ID NO:125, SEQ ID NO:129, SEQ ID NO:133, SEQ ID NO:137, SEQ ID NO:141, SEQ ID NO:145, SEQ ID NO:149, SEQ ID NO:153, SEQ ID NO:157, SEQ ID NO:161, SEQ ID NO:165, SEQ ID NO:169, SEQ ID NO:173; SEQ ID NO:177, SEQ ID NO:181, SEQ ID NO:185, SEQ ID NO:189, SEQ ID NO:193, SEQ ID NO:197, SEQ ID NO:201, SEQ ID NO:205, SEQ ID NO:209, SEQ ID NO:213, SEQ ID NO:217, SEQ ID NO:22, SEQ ID NO:225, SEQ ID NO:229, SEQ ID NO:233, SEQ ID NO:237, SEQ ID NO:241, SEQ ID NO:245, SEQ ID NO:249, SEQ ID NO:253, SEQ ID NO:257, SEQ ID NO:261, SEQ ID NO:265, SEQ ID NO:269, SEQ ID NO:273, SEQ ID NO:277 and SEQ ID NO:281.
- 2. An isolated polypeptide selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 6, SEQ ID NO: 10, SEQ ID NO: 14, SEQ ID NO: 18, SEQ ID NO: 22, SEQ ID NO: 26, SEQ ID NO: 30, SEQ ID NO: 34, SEQ ID NO: 38, SEQ ID NO: 42, SEQ ID NO: 46, SEQ ID NO: 50, SEQ ID NO: 54, SEQ ID NO:58, SEQ ID NO:62, SEQ ID NO:66, SEQ ID NO:70, SEQ ID NO:74, SEQ ID NO:78, SEQ ID NO:82, SEQ ID NO:86, SEQ ID NO:90, SEQ ID NO:94, SEQ ID NO:98, SEQ ID NO:102, SEQ ID NO:106, SEQ ID NO:110, SEQ ID NO:114, SEQ ID NO:118, SEQ ID NO:122, SEQ ID NO:126, SEQ ID NO:130, SEQ ID NO:134, SEQ ID NO:138, SEQ ID NO:142, SEQ ID NO:146, SEQ ID NO:150, SEQ ID NO:154, SEQ ID

NO:158, SEQ ID NO:162; SEQ ID NO:166,SEQ ID NO:170, SEQ ID NO:174, SEQ ID NO:178, SEQ ID NO:182, SEQ ID NO:186, SEQ ID NO:190, SEQ ID NO:194, SEQ ID NO:198, SEQ ID NO:202, SEQ ID NO:206, SEQ ID NO:210, SEQ ID NO:214, SEQ ID NO:218, SEQ ID NO:222, SEQ ID NO:226, SEQ ID NO:230, SEQ ID NO:234, SEQ ID NO:238, SEQ ID NO:242, SEQ ID NO:246, SEQ ID NO:250, SEQ ID NO:254, SEQ ID NO:258,SEQ ID NO:266, SEQ ID NO:270, SEQ ID NO:274, SEQ ID NO:278 and SEQ ID NO:282.

- 3. An isolated nucleic acid selected from the group consisting of SEQ ID NO: 3, SEQ ID NO: 7, SEQ ID NO: 11, SEQ ID NO: 15, SEQ ID NO: 19, SEQ ID NO: 23, SEQ ID NO: 27, SEQ ID NO: 31, SEQ ID NO: 35, SEQ ID NO: 39, SEQ ID NO: 43, SEQ ID NO: 47, SEQ ID NO: 51, SEQ ID NO:55, SEQ ID NO:59, SEQ ID NO:63, SEQ ID NO:67, SEQ ID NO:71, SEQ ID NO:75, SEQ ID NO:79, SEQ ID NO:83, SEQ ID NO:87, SEQ ID NO:91, SEQ ID NO:95, SEQ ID NO:99, SEQ ID NO:103, SEQ ID NO:107, SEQ ID NO:111, SEQ ID NO:115, SEQ ID NO:119, SEQ ID NO:123, SEQ ID NO:127; SEQ ID NO:131; SEQ ID NO:135, SEQ ID NO:139, SEQ ID NO:143, SEQ ID NO:147, SEQ ID NO:151, SEQ ID NO:155, SEQ ID NO:159, SEQ ID NO:163, SEQ ID NO:167, SEQ ID NO:171, SEQ ID NO:175, SEQ ID NO:179, SEQ ID NO:183, SEQ ID NO:187, SEQ ID NO:191, SEQ ID NO:195, SEQ ID NO:199, SEQ ID NO:203, SEQ ID NO:207, SEQ ID NO:211, SEQ ID NO:215, SEQ ID NO:219, SEQ ID NO:223, SEQ ID NO:227, SEQ ID NO:231, SEQ ID NO:235,SEQ ID NO:239, SEQ ID NO:243, SEQ ID NO:247, SEQ ID NO:251, SEO ID NO:255, SEQ ID NO:25, SEQ ID NO:263, SEQ ID NO:267, SEQ ID NO:271, SEQ ID NO:275, SEQ ID NO:279 and ID NO:283.
- 4. An isolated polypeptide selected from the group consisting of SEQ ID NO: 4, SEQ ID NO: 8, SEQ ID NO: 12, SEQ ID NO: 16, SEQ ID NO: 20, SEQ ID NO: 24, SEQ ID NO: 28, SEQ ID NO: 32, SEQ ID NO: 36, SEQ ID

NO: 40, SEQ ID NO: 44, SEQ ID NO: 48, SEQ ID NO: 52, SEQ ID NO:56, SEQ ID NO:60, SEQ ID NO:64, SEQ ID NO:68, SEQ ID NO:72, SEQ ID NO:76, SEQ ID NO:80, SEQ ID NO:84, SEQ ID NO:88, SEQ ID NO:92, SEQ ID NO:96, SEQ ID NO:100, SEQ ID NO:104, SEQ ID NO:108, SEQ ID NO:112, SEQ ID NO:116, SEQ ID NO:120, SEQ ID NO:124, SEQ ID NO:128, SEQ ID NO:132, SEQ ID NO:136, SEQ ID NO:140, SEQ ID NO:144, SEQ ID NO:144, SEQ ID NO:144, SEQ ID NO:152, SEQ ID NO:156, SEQ ID NO:160, SEQ ID NO:164, SEQ ID NO:168, SEQ ID NO:172, SEQ ID NO:176, SEQ ID NO:180, SEQ ID NO:184, SEQ ID NO:188, SEQ ID NO:192, SEQ ID NO:196, SEQ ID NO:200, SEQ ID NO:204, SEQ ID NO:208, SEQ ID NO:212, SEQ ID NO:216, SEQ ID NO:220, SEQ ID NO:224, SEQ ID NO:224, SEQ ID NO:232, SEQ ID NO:236, SEQ ID NO:240, SEQ ID NO:244, SEQ ID NO:248, SEQ ID NO:256, SEQ ID NO:268, SEQ ID NO:256, SEQ ID NO:268, SEQ ID NO:272, SEQ ID NO:276, SEQ ID NO:280 and SEQ ID NO:284.

- 5. An isolated polypeptide encoded by a nucleic acid of claim 1.
- 6. An isolated polypeptide encoded by a nucleic acid of claim 3.
- 7. An immunogenic or antigenic composition comprising at least one of the polypeptides of claim 2.
- 8. An immunogenic or antigenic composition comprising at least one of the polypeptides of claim 4.
- 9. A fusion protein comprising at least one of the polypeptides of claim 2.
- 10. A fusion protein comprising at least one of the polypeptides of claim 4.

- 11. A method of preventing envenomation from scorpion stings comprising administering to a mammal an antigenic composition comprising at least one polypeptide of claim 2 or a fusion protein thereof.
- 12. The method of claim 11 wherein said administering is carried out by intravenous, subcutaneous, intramuscular, intravaginal, intraperitoneal, intranasal, oral or other mucous routes.
- 13. A method of preventing envenomation from scorpion stings comprising administering to a mammal an antigenic composition comprising at least one polypeptide of claim 4 or a fusion protein thereof.
- 14. The method of claim 13 wherein said administering is carried out by intravenous, subcutaneous, intramuscular, intravaginal, intraperitoneal, intranasal, oral or other mucous routes.
- 15. A method of producing antibodies against a scorpion venom comprising injecting an antibody-producing amount of an antigenic composition comprising at least one polypeptide of claim 2 or a fusion protein thereof into a mammal.
- 16. The method of claim 15 wherein said antibodies are neutralizing antibodies.
- 17. A method of producing antibodies against a scorpion venom comprising injecting an antibody-producing amount of an antigenic composition comprising at least one polypeptide of claim 4 or a fusion protein thereof into a mammal.
- 18. The method of claim 17 wherein said antibodies are neutralizing antibodies.

- 19. A composition comprising the antibodies of claim 16 or antigen binding fragments thereof wherein said composition neutralizes the *in vivo* effect of scorpion venom.
- 20. A composition comprising the antibodies of claim 18 wherein said composition neutralizes the *in vivo* effect of scorpion venom.
- 21. A composition comprising at least on polyeptide of claim 2 or fusion proteins thereof bound to a substrate wherein said composition binds antibodies raised against *Centruroides* scorpion venom or raised against *Centruroides* venom enriched with a recombinant polypeptide of claim 2.
- 22. The composition of claim 21 wherein said composition is an immunogenic matrix.
- 23. The composition of claim 21 wherein said polypetide is bound covalently or through hyrdophobic or hydrophilic interactions to said substrate.
- 24. The composition of claim 21, wherein said substrate is selected from the group consisting of polyacrylamide, polyvinyl, activated aldehyde agaraose, sepharose and carboxymethyl cellulose.
- 25. A composition comprising at least one polypeptide of claim 4 bound to a substrate wherein said composition binds antibodies raised against *Centruroides* venom or raised against *Centruroides* venom enriched with a recombinant polypeptide of claim 4.
- 26. The composition of claim 25 wherein said composition is an immunogenic matrix.

- 27. The composition of claim 25 wherein said polypetide is bound covalently or through hyrdophobic or hydrophilic interactions to said substrate.
- 28. The composition of claim 25, wherein said substrate is selected from the group consisting of polyacrylamide, polyvinyl, activated aldehyde agaraose, sepharose and carboxymethyl cellulose.
- 29. A method of treating envenomation from scorpion stings comprising administering to a mammal in need of such treatment neutralizing antibodies obtained from a mammal previously immunized with an antibody-producing amount of an antigenic composition comprising at least one polypeptide of claim 2 or a fusion protein thereof.
- 30. A method of treating envenomation from scorpion stings comprising administering to a mammal in need of such treatment neutralizing antibodies obtained from a mammal previously immunized with an antibody-producing amount of an antigenic composition comprising at least one polypeptide of claim 4 or a fusion protein thereof.
- 31. An isolated nucleic acid sequence encoding a polypeptide of claim 2.
- 32. An isolated nucleic acid sequence encoding a polypeptide of claim 4.
- 33. The method of any one of claims 11, 13, 15, or 17 wherein said scorpion is from the genus *Centruroides*.
- 34. The method of claim 19 or 20 further comprising recovering said antibodies from said mammal.

- 35. The composition of claims 19 or 20 wherein said scorpion venom is from the genus *Centruroides*.
- 36. The method of claim 33 wherein said scorpion is from a species selected from the group consisting of C. exiilcauda, C. limpidus limpidus, C. noxius, C. elegans, C. gracilis, S. sculpturatus and C. exilicauda.
- 37. The composition of claim 35 wherein said scorpion is from a species selected from the group consisting of C. exiilcauda, C. limpidus limpidus, C. noxius, C. elegans, C. gracilis, S. sculpturatus and C. exilicauda.
- 38. A method of preventing envenomation from scorpion stings comprising administering to a mammal an antigenic composition comprising at least one polypeptide or a fusion protein thereof wherein said polypeptide is encoded by a DNA of claim 1.
- 39. A method of preventing envenomation from scorpion stings comprising administering to a mammal an antigenic composition comprising at least one polypeptide or a fusion protein thereof wherein said polypeptide is encoded by a DNA of claim 3.
- 40. The composition of claim 21 wherein said composition binds antibodies against scorpion venom toxin from a specific *Centruroides* species.
- 41. A diagnostic device comprising the composition of claim 40.
- 42. A diagnostic method to determine the species of scorpion that has stung an individual comprising:
 - a) contacting the diagnostic device of claim 41 with a sample from a stung individual, and
 - b) detecting the presence of antibodies.

- 43. The composition of claim 25 wherein said composition binds antibodies against scorpion venom toxin from a specific *Centruroides* species.
- 44. A diagnostic device comprising the composition of claim 43.
- 45. A diagnostic method to determine the species of scorpion that has stung an individual comprising:
 - a) contacting the diagnostic device of claim 43 with a sample from a stung individual, and
 - b) detecting the presence of antibodies.
- 46. The method of claim 42 or 45 wherein said antibodies are species-specific antibodies.